



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



Volume XIV

September-October, 1912

Number 5

THE DISCOVERY OF THE NEST AND EGGS OF THE CALIFORNIA PINE GROSBEAK

By MILTON S. RAY

WITH SEVENTEEN PHOTOS BY OLUF J. HEINEMANN AND THE AUTHOR

WITH the taking of the eggs of the Gray-crowned Rosy Finch at Pyramid Peak in June of 1910, there remained only three or four birds, known to breed in California, whose nests and eggs were yet undiscovered. One of these remaining few was the California Pine Grosbeak (*Pinicola californica*).

In recording the discovery of the nest and eggs of this bird it is a fitting time, I think, to review the published literature referring to this species, at once one of the rarest, and most interesting forms of birdlife to be found in the great Sierran woodland. It happens, however, that there is but little literature for reference; in fact, many workers in the bird's range have failed to record its presence at all and few have found it in any abundance. Although the majority of these workers were in the field during the summer months, the home life of the California Pine Grosbeak has remained unknown. The table on the next page gives the published records of the bird's occurrence.

Belding (1890) writes as follows: "Summit, Central Pacific Railroad, August 11, 1882, tolerably common; from June 23 to July 10, 1885, an adult male and female feeding in alders; during this time these only; but later, in August and September, not rare, in fact rather common. Blood's [Calaveras County] July 16, 1880, shot an adult female which probably had a nest; specimen sent to Smithsonian Institution."

Dr. A. K. Fisher, in his report on the birds of the Death Valley Expedition (1893), says of this species: "Mr. Nelson saw a fine adult male pine grosbeak in brilliant plumage on the head of the San Joaquin River, July 30 [1891]. This individual was the only one seen during the year."

W. W. Price, who was first to separate this bird from the eastern form,

TABLE SHOWING RECORDED OCCURRENCES OF THE CALIFORNIA PINE GROSBEAK

RECORDED BY	YEAR	LOCALITY AND REMARKS	PUBLICATION
James G. Cooper	1868	Johnson's Pass, Sierra Nevada, Sept. *	Proc. Calif. Acad. Sci., IV, p. 8
" "	1870	Resident on high Sierra Nevada	Orn. Calif., I, p. 151
Baird, Brewer and Ridgway	1874	Summit Central Pac. R. R. Pass, 7000 ft.	Hist. N. Am. Birds, I, p. 453
Robert Ridgway	1878	Soda Springs, Placer Co.	Bull. Nutt. Orn. Club, III, p. 66
Lyman Belding	1879	Soda Springs, Sept.	Proc. U. S. Nat. Mus., I, p. 412
" "	1890	Blood's, Calaveras Co., July 16, 1880	Land Birds Pac. Dist., p. 131
" "	"	Summit, C. P. R. R., Placer Co. August 11, 1882, and between June 23 and Sept., 1885	" " " " "
A. K. Fisher	1893	Head San Joaquin River, July 30, 1891	N. Am. Fauna, no. 7, p. 79
William W. Price	1897	Pyramid Peak, August 5, 1892	Auk, XIV, p. 184
" "	"	Silver Lake, Amador Co., June 27, 1895	" " p. 185
" "	"	Pyramid Peak, July and August, 1895 and 1896	" " "
Chester Barlow	1900	Forni Meadow, El Dorado Co., June 9, 1900	Condor, II, p. 107
Milton S. Ray	1910	Pyramid Peak Plateau, El Dorado Co., June 9, 1910	Condor, XII, p. 149
" "	1910	Pyramid Peak, June 10, 1910, altitude 9000 ft.	" " "
" "	1912	Lake of the Woods, El Dorado Co., July 1, 1909	Condor XIV, p. 13

* Two skins taken by J. G. Cooper are now in the California Museum of Vertebrate Zoology. These bear data in Cooper's handwriting as follows. Mus. no. 4134: "*Pinicola* | Summit Johnson's Pass | Sept. 22-63 J. G. C." (The other side of the label gives measurements; the bird is evidently an immature male, though the sex mark is omitted.) Mus. no. 4133: "*Pinicola Canadensis* ♂ | Summit, Placer Co., Cal. | July 26th, '70 J. G. C." (The other side of the label gives measurements and color of iris, bill and feet.)

writes as follows (1897): "This apparently very distinct *Pinicola* is an inhabitant of the higher Sierra Nevada Mountains of Central California. It is strictly an alpine species; I have never seen it below 7000 feet and I have taken it near the timber-line. It is peculiar to the belt of tamarack pine (*Pinus murrayana*), and the beautiful red alpine fir (*Abies magnifica*), and most of the specimens taken were in groves of this latter tree. According to my observations this bird is uncommon, for, during several vacations spent in the higher Sierra, I have met with it only on rare occasions. The first time I saw this Grosbeak was on the evening of August 5, 1892, near Pyramid Peak. I was returning to my camp along the margin of a shallow alpine lake, bordered by a dense growth of *Abies magnifica*, when a grayish bird flew fearlessly to the edge of the water within a few feet of me. The color was so very similar to that of Townsend's Solitaire, *Myadestes townsendii*, I might in the twilight have passed it for that species had I not caught a glimpse of its large and heavy bill. I secured it, and to my surprise found it an adult female *Pinicola*, the first I had ever seen from California. I saw no more that summer though I spent over a month in the higher altitudes.

"The next time I observed the species was in 1895. I obtained, June 27, a fine male near Silver Lake in Amador Co. (about 20 miles due south of Pyramid Peak), and saw on the same date a female which was evidently its mate. No

more were seen in that locality, but in July of the same summer I saw two or three individuals in fir woods on Pyramid Peak, but secured none.

"Last summer, 1896, I again visited Pyramid Peak, and was fortunate in getting a fine series of *Pinicola*, 20 specimens in all, and of which all but 4 were available for examination in making the present report. I was assisted in my field work by Mr. C. S. Dole and Mr. P. O. Simons, and to their efforts is greatly due the large and interesting series.

"The greater number of adults were taken on the edges of Alpine pastures where salt is placed on fallen logs for stock. The Pine Grosbeak visits these 'salt licks' in company with Cassin's Purple Finch and the Western Evening Grosbeak, and was at all times exceedingly fearless and unsuspicious. The males have a



Fig. 62. UPPER PORTION OF THE FORNI MEADOW, LOOKING NORTH; THE FORNI CABINS CAN BE SEEN AT THE EXTREME UPPER END TOWARDS THE BASE OF PYRAMID PEAK; PHOTOGRAPHED ON OUR FIRST VISIT JULY 7, 1902, ON WHICH DATE THE SNOW HAD ALMOST ENTIRELY DISAPPEARED

very pleasing song, and hearing it upon one occasion, I thought it resembled the song of *Carpodacus cassinii*. Their call note is not loud and grating like the note of the Evening Grosbeak.

"They breed late, as attested by two nestlings brought to me July 29, by a camper, who found them on the lower branches of a fir in a wild glen at the western base of Pyramid Peak, at about 9000 feet elevation. He did not see any nest, nor did the parent birds put in an appearance. The same day Mr. Dole and Mr. Simons each obtained a young specimen, perhaps five days older. They could fly quite easily. On August 3, while collecting in a forest of fir east of Pyramid Peak, Mr. Dole obtained two additional young; which were

nearly full grown. The female parent which was feeding them was also secured.

"The crop and stomach of an adult contained the soft leaf ends of *Pinus murrayana* and *Abies magnifica*, besides seeds and portions of various insects.

"Unlike the Pine Grosbeak living in the far north, these birds probably find it unnecessary to migrate any great distance in winter. If the weather is too severe on the alpine summits, they can in a moment drop down into the deep cañons which furrow the western flank of the Sierra, and find a temperate climate and abundance of food."

In a recent letter (August 2, 1912), Mr. Price advises that with the exception of the fact that he has observed the bird in the summer time of various years since, he has no further notes than those already published. By reference it will be seen that Price does not include this species in his account of "Some Winter Birds of the High Sierras" (Condor, VI, p. 70), and in answer to my question he states that he has no winter record of the bird at all. Mr. Joseph Grinnell



Fig. 63. UPPER PORTION OF THE FORNI MEADOW, LOOKING SOUTH; PHOTO TAKEN JUNE 11, 1911; COMPARE WITH FIG. 62

informs me that as ornithologists living in the Sierran foothills have never recorded the bird as a winter migrant or winter visitant and that as he found the Alaskan bird, *P. e. alascensis*, resident in the Kowak Valley, it can be quite safely assumed, by inference, that the Californian bird is likewise permanently resident in the Boreal zone of the Sierras.

Price described the California Pine Grosbeak as a *subspecies* somewhat in opposition to the canons of the American Ornithologists union; for he says "I have seen no examples of intergradation. However, these may be expected from the higher mountains northward." Mr. Joseph Grinnell informs me that no birds have ever been recorded north of Placer County, except those of another form near Mount Baker, Washington, and in British Columbia. On account of there being no examples of intergradation (due to the bird's isolated habitat) and to sharply defined differences existing in shape of bill between this and

other birds of the genus, the California Pine Grosbeak should stand as *Pinicola californica*, a distinct species.

Chester Barlow (Condor, II, pp. 107, 109, and III, p. 169) tells of the Pine Grosbeak as follows: On June 9, 1900, "while we were passing through a decided bog, we met our first California Pine Grosbeak quietly feeding beside an old log." The bird, a male in brilliant red plumage, was very tame and was probably nesting in the vicinity. "At this place the red firs hold numerous accumulations of needles about the size of a nest, which would render the location of a nest difficult excepting by watching the bird." "We saw others of this species, which seems to be a fairly sociable bird, two males coming to a tamarack within a few feet of our camp." It is "seemingly a species of irregular distribution, not occurring below 6,000 or 7,000 feet." "The only note so far as observed consisted of a harsh call note very similar to that of the Louisiana Tanager."

Dr. Sterling Bunnell, who has traveled along the Sierran crest from Mt.

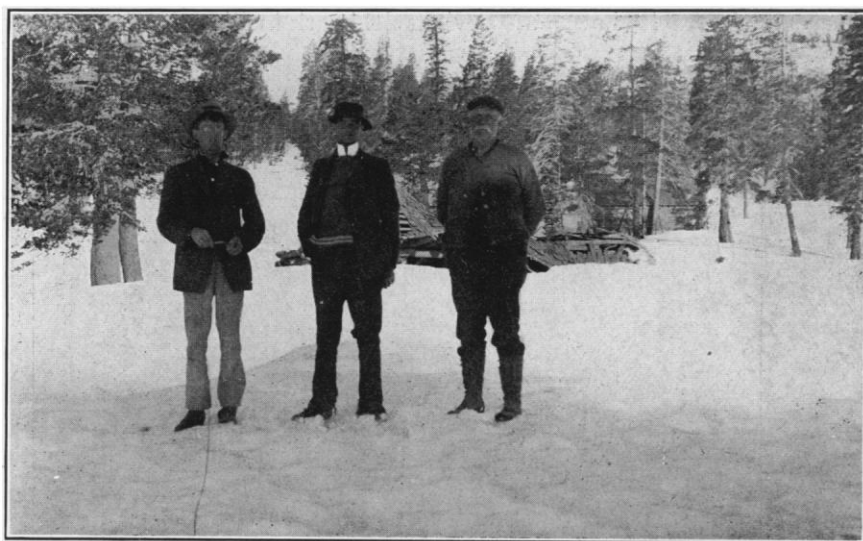


Fig. 64. OUR 1911 PARTY AT FORNI'S, TAKEN JUNE 11; LEFT TO RIGHT, CARRIGER, RAY, LITTLEJOHN; THE ROOF OF ONE OF THE CABINS DEMOLISHED BY WINTER SNOWS CAN BE SEEN IN THE BACKGROUND

Whitney to Shasta, says in a letter under date of July 8, 1912, that notwithstanding the extensive territory he covered, his notes on the occurrence of this bird are so few they would scarcely be worthy of publication.

During the past summer I had the pleasure of being some days afield with Messrs. Forrest Hanford and Loren E. Taylor, both of whom are veteran observers in the Sierras, and I am indebted to Mr. Hanford for the following notes. "After spending a number of summers in the Sierras, in the vicinity of Pyramid Peak and Lake Tahoe, I find my notes on the Pine Grosbeak somewhat limited; in fact, my records of not observing the Grosbeak are many more than the few individuals noted, and perhaps the only value of the few notes I have been able to gather would be to show its scarcity in its summer breeding ground and in country seemingly well adapted in altitude and food supply for this species.

"In July, 1902, Mr. L. E. Taylor and I made a trip through the Silver Creek

region, about three miles west of Pyramid Peak. Our way led mostly through forests of red fir and tamarack pine; at Blakeley's three Pine Grosbeaks were observed feeding along the west bank of Silver Fork. The next day, some miles north of Wright's Lake, two Grosbeaks were seen quietly feeding among red firs bordering our road.

"On June 6, 1904, Peavine Ridge was crossed to Silver Creek, over snow in many places. At Blakeley's, near Wright's Lake, snow was banked up to the window sills. Seven or eight days were taken up in ranging through the country, but no Grosbeaks were observed.

"This year, 1912, Taylor and I camped for some days at Star Lake, and a little later, in the beginning of July, two weeks were spent at Lake-of-the-Woods, near Pyramid Peak. On our return journey we crossed Devil's Basin into Rock-bound Valley and through Emerald Bay Gorge to Lake Tahoe, and though we traveled through miles of forest almost every day of our outing no Pine Grosbeaks were seen."

The following table shows our previous fieldwork in Pine Grosbeak territory, all of which, with the exception of "Spooner-Marlette Lake", lies within Californian territory. The record of July, 1902, I have questioned as I did not see the bird at close range. As we work some distance apart, where there were more than one afield, joint mileage is given.

TABLE SHOWING OUR PREVIOUS FIELDWORK IN THE RANGE OF CALIFORNIA PINE GROSBK

FIELD WORKERS	DATE	VICINITY	ELEVATION	MILES C'V'R'D	BIRDS SEEN
Ray	June 4, 1901	Phillips' Station	6500 to 7600	5	0
"	June 16, 1902	" "	" " "	5	0
"	June 21, 1902	Star Lake	7500 to 9000	8	0
"	July 1, 1902	Grass Lake	6500 to 7300	3	0
"	July 3, 1902	Phillips' Station	6500 to 7600	5	0
"	July 4-7, 1902	Pyramid Peak Region	7000 to 9000	25	1 (?)
"	June 10, 1903	" " "	7000	4	0
"	June 11-12, 1903	Phillips' Station	6500 to 7600	15	0
"	June 26-27, 1903	Star Lake	7500 to 9000	12	0
"	August 12, 1906	Phillips' Station	6500 to 7600	5	0
"	August 24-25, 1906	Star Lake	7500 to 9000	12	0
"	September 6, 1906	Phillips' Station	6500 to 7600	5	0
"	June 3, 1909	Cold Creek Meadows	7500	4	0
"	June 11-13, 1909	Deerington's	6700 to 7600	11	0
"	June 22-24, 1909	Spooner-Marlette Lake	7000 to 8000	14	0
"	June 28-July 1, 1909	Star Lake-Lake of the Woods	6500 to 8500	29	2
" and Carriger	June 5, 1910	Cold Creek Meadows	7500 to 8500	16	0
" " "	June 9-13, 1910	Pyramid Peak Region	6500 to 9000	90	10
"	June 19-24, 1910	" " "	" " "	34	5
"	June 28, 1910	Cold Creek Meadows	7500	5	0
" and Carriger	June 10-14, 1911	Pyramid Peak Region	6500 to 9000	117	2
and Littlejohn					
"	June 24, 1911	Cold Creek Meadows	7500	5	2
<i>Total Days 40</i>				<i>Total Miles 429</i>	<i>Total Birds 22</i>

My own first field work in the haunts of the Pine Grosbeak was about Phillips' Station on the summit of the Lake Tahoe stage road, June 4, 1901. The work here, like that on June 16 of the following year, was done while en route to Lake Tahoe and was not extensive. No Pine Grosbeaks were observed on either trip. During 1902 I visited Star Lake on June 21, Grass Lake July 1 and Phillips' Station for the second time on July 3, but failed to find any of the birds.

From July 4 to 7 was passed at various points in the very heart of the home country of *Pinicola*, Wright's Lake, Forni's and Pyramid Peak; but only on one occasion was a bird seen referable to this species. On July 6 while edging around a snow-fringed lake at 9000 feet altitude, on the southwest slope of Pyramid Peak, I saw a bird fly from a tall hemlock that appeared to be a Pine Grosbeak; the distance, however, prevented me from being absolutely positive of its identity.

On June 10 of the following year (1903) we attempted to reach this region but failed. A record of this trip (*Auk*, xxii, p. 364) in part reads as follows: "June 10. Our experience today will be long remembered. Thinking that even

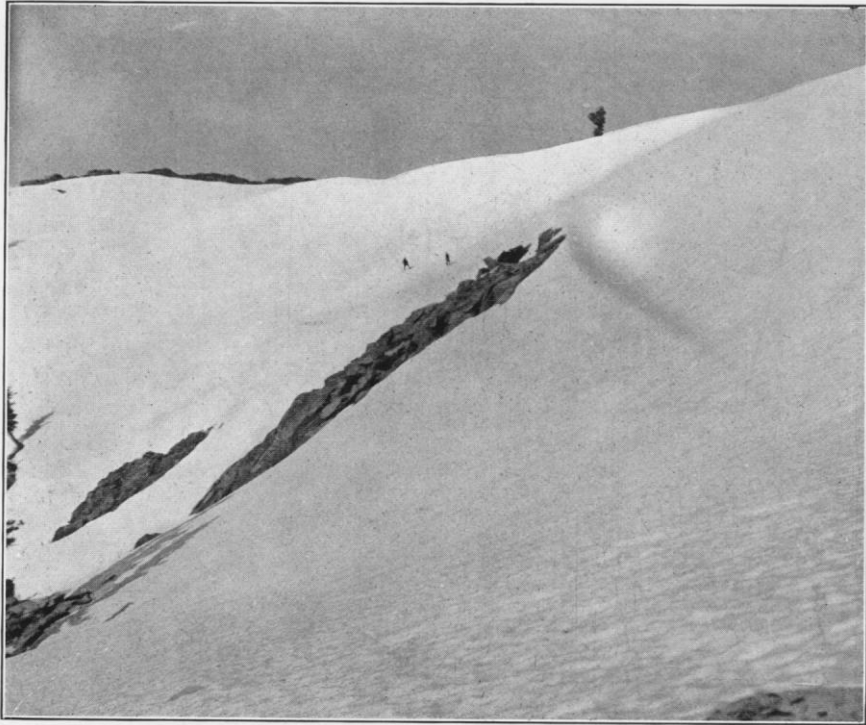


Fig. 65. A GREAT SNOW-DRIFT OF 1911, THE YEAR OF "MORE SNOW THAN THE WHITE MAN EVER BEFORE SAW"; CARRIGER AND LITTLEJOHN CAN BE DISCERNED IN THE TOP CENTER OF THE PICTURE; ELEVATION AT TOP OF DRIFT 8500 FEET, THUS BELOW TIMBER-LINE;
PHOTO TAKEN JUNE 12, 1911

if snow should cover the road, we could reach Forni's, at the base of Pyramid Peak, we left the main highway at Georgetown Junction at noon and began the ascent by a steep road used only by dairymen in the late summer. Many fallen trees, the work of winter storms, lay across the road, and much accumulated brush impeded our progress, which, even at the best, was slow. We felt rewarded for our efforts, however, when we reached the summit, where the willows were only in bud and the grass just peeping out. Numberless chickadees were flitting about, besides various other species of bird-life. Our elation was short lived, however, for a blinding rain-storm, ushered in with terrific thunder and lightning, soon made dismal the merry, sun-lit woods. * * * After a while the rain

ceased and we proceeded on our way, but soon the deep snow made the road impassable, and we were compelled to unharness the horses, packing only the necessities on their backs, in order to continue. In places small streams had undermined the snow, in which the horses would sink deep, shifting the pack in their efforts to right themselves. Half a mile of this disheartened us and we turned back; but when we reached our wagon we found we were unable to turn it on the narrow road-bed. Not having eaten since breakfast, and being wet and cold, we were indeed in a sorry plight. After unloading the wagon we finally succeeded, inch by inch, in turning it around, and a mad ride down the grade brought us again to Georgetown Junction; and a few miles farther on we reached Echo, where we built a roaring camp fire and dried our outfit."

From June 11 to 13 (1903) was spent in fieldwork at Phillips' Station, but without noting any Pine Grosbeaks; nor were any seen in the vicinity of Star Lake where we camped on June 26 and 27.

In 1906 the Lake Tahoe region was visited in August and September, a much later time than on any previous trip, and when one would rather expect to find juvenile *Pinicola* in evidence. Fieldwork was done in the higher altitudes, at Phillips' Station August 12 and September 6, and at Star Lake August 24 and 25; but none of the birds in question were recorded.

During 1909 a trip was taken to Cold Creek Meadows on June 3, while from June 11 to 13 was spent at Deerington's, a mile east of Phillips' Station. At both places owing to the lateness of the summer the ground still lay hidden beneath deep snow. Although all of the commoner alpine species were met with in their usual numbers, I failed to find any Pine Grosbeaks. On June 24, at Marlette Lake, Nevada, 8000 feet altitude, the Ruby-crowned Kinglet, Sierra Grouse, Clarke Nutcracker, Sierra Hermit Thrush and other boreal birds were found, but none of the much-sought Grosbeaks. On June 28 Heinemann and I started on an extended tramp through the mountains that encircle the southern end of Lake Tahoe.

It was near the end of the trip, at Lake-of-the-Woods, elevation 8000 feet, on July 1, that we saw our first Grosbeaks. It was a little after daybreak and, as the welcome rays of the morning sun came filtering through the trees about our camp, we became aware of the presence of a pair of these birds. The Pine Grosbeaks were watched with that extreme interest which must ever be given by the oologist to birds whose eggs remain unknown to science. The pair staid about our camp for some time, feeding on the ground and in the trees. If the birds were nesting we failed to gain any clue of it from their actions, for they flitted from branch to branch and from tree to tree in a leisurely and unconcerned fashion, finally taking wing across the lake and disappearing in the heavy timber.

While our efforts in 1910 were principally confined to taking the eggs of the Gray-crowned Rosy Finch, nevertheless it was on the two journeys to Pyramid Peak in quest of these eggs that we found more Pine Grosbeaks than in all the previous years combined. In 124 miles of fieldwork fifteen birds were seen, which shows, however, that the bird must be considered rare even in the most favorable localities. We found the bird absent in seemingly suitable territory which would show its distribution to be rather irregular. During all the previous years that we traversed this same region we found only a small fraction of the number now observed, which would further prove the bird's occurrence to be rather uncertain as well.

We saw the first bird for the season of 1910 on the Pyramid Peak Plateau

at 7500 feet elevation, on June 9; another was seen on the slope of Pyramid Peak at 9000 feet altitude on June 10; and on the day following 500 feet lower we watched a pair in a grove of firs for a considerable length of time. At Lake-of-the-Woods we noted another pair on June 12. Mr. Carriger also observed a lone individual; and, later in the day, on the top of a nearby ridge at 8500 feet, another pair was seen. On June 13 near Deerington's, at 7400 feet, we came upon a male, in rich red plumage, sitting on the branch of a pine sapling a few feet up.

All the birds were remarkably tame, seemingly taking but little notice of our proximity, and all were watched as long as it was practicable. We observed most of them feeding, usually in the trees although occasionally on the ground. Others, quietly perching on some pine or fir branch, sat for such a long time unmoved as to give us the impression that they were either admiring the scenic surroundings or indulging in a day-time nap after the manner of a nighthawk.

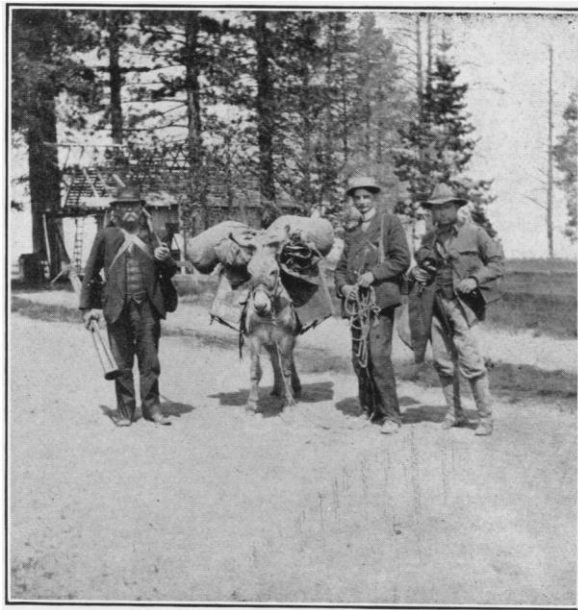


Fig. 66. PERSONNEL OF THE 1912 EXPEDITION LEAVING
BASE ON LAKE TAHOE, JUNE 11; LEFT TO RIGHT,
LITTLEJOHN, "JIM", RAY, HEINEMANN

No birds were heard to sing, and the mellow call note was given but infrequently. Carriger freely acknowledged as we left the summit that, in respect to their nesting habits, the birds presented the most puzzling problem that he had ever attempted to solve.

On the second trip to Pyramid Peak in 1910 I noticed five more birds, three at Lake-of-the-Woods on June 22, and two near Phillips' Station June 23. Although somewhat later than our previous trip, the actions of the birds remained the same and no progress was made towards solving the problem of the bird's nesting.

On our return to San Francisco, in reviewing the results of our work afield, while we had to acknowledge that we had made little or no headway in the solution of the Pinicolan nesting problem, it was this very elusiveness that made us the more determined to persist. So, like the trip of 1910 that was planned pri-

marily to take the eggs of the Gray-crowned Rosy Finch, that of 1911 had one principal object in view, to take those of the California Pine Grosbeak.

During the winter and spring of 1911 it was reported that there was more snow in the High Sierras than the white man had ever seen before, and as I found on reaching Lake Tahoe, on May 13, that the truth had not been exaggerated, Carriger and Littlejohn, who were to join me, delayed coming until June 4, and even then it was not deemed advisable to start to the Pyramid Peak region until six days later. As all over the summit country we found deep snow, we naturally expected to find it still deeper up around Pyramid Peak, but we were scarcely prepared for the sight that met our gaze at the top of the Echo-Forni trail the following afternoon, June 11.

Under the lofty pines and firs, stretching unbroken in every direction, were great snowy drifts, so high in places that the smaller trees were almost hidden, while meadows, roads and brooks, all lost to view, made once familiar localities now hard to recognize. In places the larger streams had cut their way through the snow, leaving high steep banks rising on each side, to cross over which was both difficult and dangerous. In other places the soft condition of the snow and hidden water beneath made travelling even more perilous. Notwithstanding the deep snow considerable birdlife was in evidence, although not, it seemed, in its usual abundance. At 7500 feet altitude, where snow on the ground was over ten feet in depth, Carriger excavated the nest of a Mountain Chickadee holding eight almost fresh eggs; and, as another nest of this bird had been found in the morning near Phillips' Station with seven eggs, it was evident that while the severe climatic conditions had somewhat delayed, they had not prevented, these birds from nesting.

Although we had left Phillips' Station at 6:45 A. M., it was 2:35 P. M. before we came to the lower end of the Forni Meadow. From here we were glad to see that some of the old dairy houses were still standing after the storms of a winter that had destroyed so many homes at much lower altitudes. As we neared the cabins Carriger and Littlejohn, weary of the heavy pack and the hard climb, could not refrain from hurrying on; but I stopped for a time in order to take the photograph herewith shown (fig. 63).

The following morning we arose by candle light and by 5:50 A. M. we were plodding up over the snow, which was now hard, to still higher elevations. The extent of these drifts at 8500 feet is shown in the accompanying picture (fig. 65). The weather continued sultry and the heat, due to the reflection from the snow and to the lack of a breeze in the narrow snow-cañons, was very oppressive. Although we worked the entire day, scarcely pausing for a rest, we did not find a single Pine Grosbeak, notwithstanding, too, that we listed twenty-four species of birds and worked from 7,500 to 10,020 feet altitude. The only nests found during the day were one of the Mountain Chickadee with six fresh eggs, one of the Sierra Creeper with two eggs, also unincubated, a newly drilled home of the Williamson Sapsucker, and a just completed nest of the Blue-fronted Jay.

There was considerable difference of opinion among the members of our party as to why we had failed to find any representatives of the sought for Grosbeaks. Personally I was in favor of further field work, but as no one echoed this sentiment and as our scanty supply of provisions precluded more than another day's stay, we finally decided to leave the following morning. A different and longer return route was selected, however, which would allow us to make considerably further search between 7000 and 7500 feet elevation.

We reached Phillips' Station late the following afternoon, however, without having seen a single Pine Grosbeak. In ornithology, as in politics, it seems that the unexpected so often happens; and so it occurred the following morning, when we came upon a pair of the long-sought Grosbeaks by the roadside near Deerington's. One of the birds was on the ground and the other on a fir bough just above. The discovery brought us to an abrupt standstill, and while engaged in observing the pair we saw with disgust the approach of a six horse mountain team. On it came, with the crack of whip, the creak of wheels and the clatter of hoofs. Our birds paused a moment and then took wing. Wistfully we watched them as they flew up the mountain side until they were lost to view. With the exception of a pair I closely observed for several hours feeding in the trees on

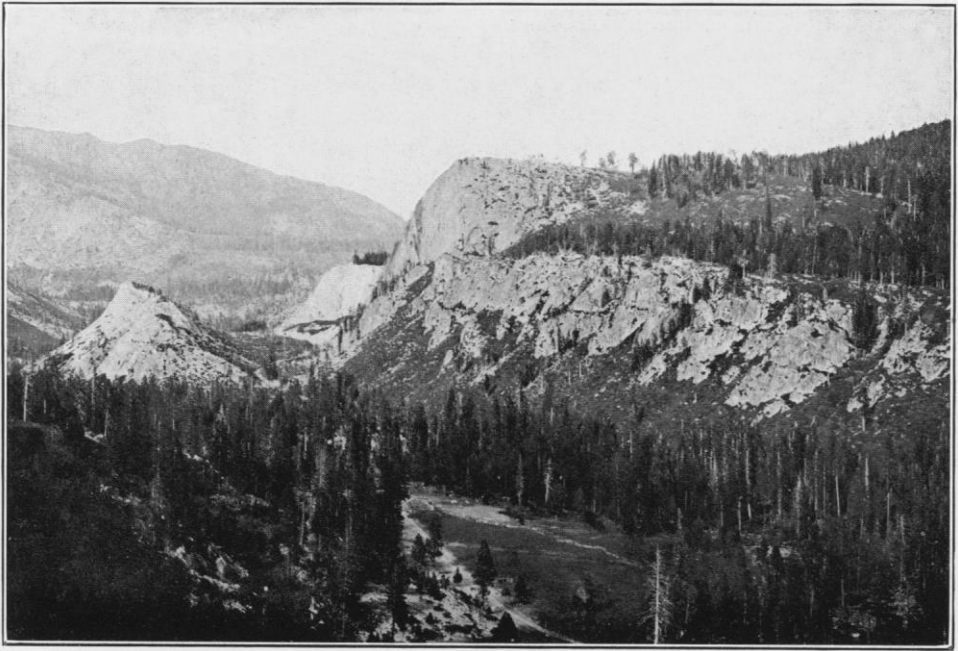


Fig. 67. ECHO, ELEVATION 5700 FEET, THE NEAREST POST-OFFICE TO THE TYPE LOCALITY OF *Pinicola californica*; THE PHOTO GIVES AN IDEA OF THE RUGGEDNESS OF THE COUNTRY EN ROUTE; IT IS NEAR HERE THAT BOTH A TRAIL AND A ROAD START FOR THE PYRAMID PEAK REGION, THE FORMER BEING DIRECTLY ACROSS THE STATE ROAD OPPOSITE THE TALL DEAD TREE IN THE FOREGROUND

the edge of Cold Creek Meadow on June 24 these were the only birds seen during the year 1911.

At the beginning of the present year (1912), notwithstanding past reverses, plans were laid for a return journey to the Pyramid Peak region to make another search for the eggs of the California Pine Grosbeak. Both Littlejohn and I desired to make another attempt, but Carriger, although also willing, found that he would be unable to accompany us. Heinemann, my companion on many former trips, volunteered his services as photographer, of which we were very glad to avail ourselves.

By early spring every detail was carefully worked out, as we endeavored where we could to overcome the difficulties and prevent the mistakes of previous

years. Among other things suggested was the advisability of seeking some new territory in the bird's range. Grinnell in his *Check-list of California Birds* gives this as "the Boreal Zone of the Central Sierra Nevada Mountains from Placer County south to Fresno County." After due consideration, however, we all agreed that familiarity with any locality was a decided advantage and the Pyramid Peak region polled a unanimous vote.

The second point to be settled was the transporting of sufficient supplies to allow for a stay of at least ten days in the region. The High Sierras above 7500 feet altitude are by no means easy of access, as at these elevations deep snow often covers the ground until July or later; it is in fact this inaccessibility of the bird's summer home together with its restricted geographical range, that accounts for its eggs being peculiarly difficult to secure. Experience had proven that we were unable to carry sufficient supplies afoot and as it would be impracticable to use either a horse and wagon or pack-horses, a pack-burro appeared to be the only possible solution. This invaluable aid to our quest we arranged to obtain at Lake Tahoe.

In the matter of stores, Heinemann, commissary-in-chief, prepared a list of provisions, especially adapted to the trip, which would allow for exactly twenty cooked meals, and ten luncheons in the field. Each meal was portioned out and labeled and, on our return, the consensus of opinion was that the method was a decided improvement over the usual way. Our equipment in other respects was equally complete and included, among other things, waterproof covers for all members of the party, including the pack-burro, which would enable us to continue notwithstanding the rain or snowstorms which are of common occurrence at any time in these altitudes, regardless of the calendar, the predictions of the weather-bureau, or the pleasant prophecies of the spring-poet.

In the Pyramid region the pines and firs often spear skyward to such a height that a nest, located in some situations, would be inaccessible by ordinary methods of fieldwork. Frequently with these giants of the forest it is from 60 to 90 feet before the first limb branches out, and owing to the hugeness of the trunk and the soft condition of the bark, steel climbers are practically useless. To overcome this difficulty we carried long coils of rope and sufficient carpenter tools to build a rough staging if necessary. Of primary importance, too, was a really wonderful contrivance of Chase Littlejohn's that would enable us to lift eggs from a nest on a branch even fifteen or twenty feet out, and with perfect safety. Equally invaluable, too, and also devised by Littlejohn, was a partitioned collecting case with removable compartments lined with eider-down cloth. Specimens placed in this case could be lowered, in offhand fashion, from any height, in absolute security.

But by far the most important point to be settled was the selection of the proper time to visit the region. As no actual nest of the bird had ever been found, this was purely a matter of individual calculation. To go by the scant information obtainable one had two diverse alternatives: on the one hand was Price's statement that the birds were late breeders, as he had seen young birds just out of the nest on July 29 (which would make about July 1 a proper time for eggs); while on the other hand (speaking of another subspecies of the Pine Grosbeak found in the Rocky Mountains) was Coues' statement that near the timber line in Colorado he noted young birds fully fledged in June. This latter, although an indefinite date, would put the proper time at least a month earlier than the date by Price's reckoning.

Personally, however, I was not greatly influenced by the findings of either Price or Coues, for while I considered them both to be correct in their statements I further believed Price had simply found the young of late, and Coues of early, breeding birds. Being of this impression I had nearly always visited the region during the month of June; for I could see no reason why the nesting time of *Pinicola* should be so radically different from 95 percent of the Sierran avi-fauna, which nests between May 15 and June 30, and especially as the remaining five percent consisted of such remarkably early nesting birds as the Clarke Nutcracker, Canada Goose, American Merganser and some of the Raptors.

The fact of *Pinicola* being resident, or at least migrating only a short distance, too, seemed to indicate that the time of nesting would be rather earlier than later, notwithstanding the high altitude of its home; for being undoubtedly a tree-nesting bird and arboreal in its habits it did not seem that it would be so

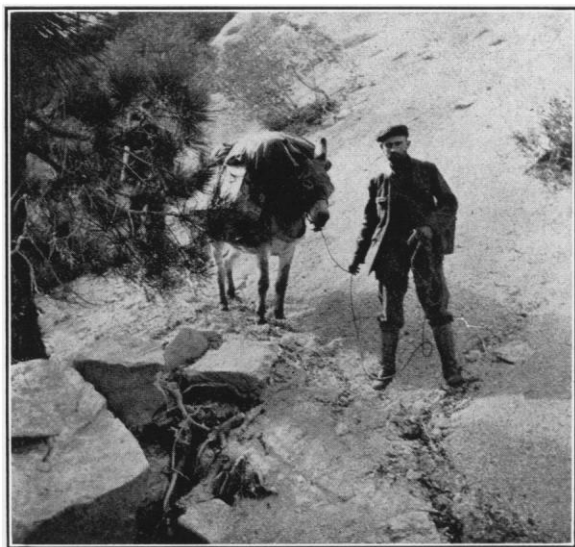


Fig. 68. "JIM" AND HEINEMANN ROUNDING A PRECIPITOUS MOUNTAIN SIDE AT 6500 FEET ALTITUDE

greatly affected by the depth of snow on the ground, or other severe climatic conditions, as to delay nesting a month later than the majority of species in the same habitat. Littlejohn suggested that if there was a delay it might be caused by the lack of some certain food supply for the young. To me, however, this explanation did not seem tenable.

While our own observations rather favored Price's theory in the respect that no young of the year were noted in June or early July, yet on the other hand they also favored Coues' in that we found no birds engaged in nest building in late June or early July which according to Price would be the proper season for such operations. In fact, as before stated, we found at all dates the birds apparently leading a sort of Bohemian life; but I accounted for this pelagic habitus by the fact that as the extreme limits of the nesting season of most Sierran birds extended from May 10 to July 15, it allowed them considerable latitude in this respect.

To give examples of this wide variation in nesting dates of individual species I may state I have found scattered pairs of various birds nesting in Lake Valley between May 15 and 20, while the majority were still in flocks. To cite another instance: on the shore of Lake Tahoe on June 25, 1911, young-of-the-year of *Carpodacus cassini* were noted, while a few yards away I flushed another bird of the same species from a nest containing two fresh eggs.

Two other reasons could also be offered for the wandering mode of life of *Pinicola*. One of these was that the birds were so extremely wary that it was impossible to either flush them from a nest or see them return to it and that their continued journeying through the woods was simply done in their efforts to lead us away from their nesting grounds. Another explanation was that many of the so-called pairs observed were not in reality pairs at all but two males, as Ridgway, writing of the nearly allied form *canadensis* states (Birds of North and Middle America, 1, p. 61): "Some *males* (immature?) are exactly like the



Fig. 69. A MEADOW-EDGE NEAR FORNI'S WHERE A PAIR OF CALIFORNIA PINE GROSBEAKS WAS SEEN JUNE 14, 1912; ALTITUDE 7500 FEET

adult *females* in coloration." Although Price made no mention of this strange condition existing in any of the specimens he secured of *californica*, yet, on account of the close relationship between this bird and *canadensis* such a condition seemed not at all unlikely.

Basing my calculations upon my theory in the matter and after a careful comparison of nesting dates of certain species for a number of seasons at Forni's (7500 feet), Phillips' Station (6900 feet) and Lake Valley (6220 feet), it seemed apparent to me that June 1 of a *normal* year would be the proper date to visit the region. At this time, I felt, that some birds at least would be found engaged in nest building, and nest-building time is often the only period when nests difficult to find can be located; and from the height of the trees and the thickness of their foliage it appeared that those of the Pine Grosbeak would be of this nature.

To find just what date in 1912 June 1 of a *normal* year would be, however,

was not particularly easy; for each Sierran summer is somewhat different from the preceeding and what might be termed the "shift" of the Sierran season which results from a number of causes, is very puzzling. In lower zones, here along the coast, for instance, hummingbirds have been found nesting in January, bush-titmice in February, chickadees in March, juncos in April, warblers in May, flycatchers in June, and vireos in July. In the High Sierras, however, the season of reproduction is very short and with few exceptions all birds nest between May 15 and June 30; it is on account of this shortness of the season that the "shift" has such a marked effect. Above 7500 feet altitude there are but very few resident species and in the lower zones it is this class that contains the bulk of the early breeders.

The season of 1910 in the Tahoe region was one of the earliest known to the old settlers and, in respect to nesting conditions, was at least from fourteen to



Fig. 70. HEINEMANN AND LITTLEJOHN ON THE SNOW
NEAR TIMBERLINE AT ABOUT 8750 FEET ALTITUDE;
PHOTO TAKEN JUNE 17, 1912, WHILE EN
ROUTE TO PYRAMID PEAK

sixteen days earlier than normal. On the other hand, 1911 was a year of very heavy snow-fall and about a week later than normal. On June 9, 1910, we found only scattered patches of light snow on the Forni meadow, while on June 11 of 1911 we found it from 6 to 10 feet in depth. With the coming of 1912 it seemed the weather pendulum was swinging back again, for the winter remained remarkably mild in character. We kept a close watch on the snow reports of the U. S. Weather Bureau, and the following table shows comparative conditions for the last six years on February 28.

TABLE SHOWING INCHES OF SNOW ON GROUND FEBRUARY 28

	1907	1908	1909	1910	1911	1912
Summit S. P. R. R., Placer Co., 7018 ft. altitude	88	74	213	72	215	23
Tahoe City, Lake Tahoe, 6220 ft. altitude	—	—	66	40	78	19
McKinney's, Lake Tahoe, 6220 ft. altitude	—	—	72	38	79	14

The spring weather continued mild and trains were run on mountain routes and stock was turned out to pasture, around the lake, long before the customary time. In fact everything now pointed to an unusually early summer. Littlejohn was the first of our party to visit the Tahoe region, reaching the Lake at the end of April. While the purpose of his trip was more particularly to study Tahoe's water-bird-life, nevertheless he kept a sharp lookout for Pine Grosbeaks as we were especially interested to know whether they occurred in Lake Valley at this season. If they could be found at this altitude (6220 feet) it would be conclusive evidence that, having to migrate to higher elevations to nest, the birds could scarcely do so before May 15 or later.

While Littlejohn secured some very interesting specimens and notes on spring migration no trace of Pine Grosbeaks was found. During his stay, which was until the first week in May, storms of hail, sleet or snow prevailed almost continually, and while of course at this altitude the late snow quickly melted, this change in weather conditions greatly retarded the nesting time of Sierran bird-life.

The writer reached Bijou, Lake Tahoe, our 1912 base, on May 19, in time, should the season be early, to still reach the Pyramid Peak region at a proper date. En route to Bijou conditions everywhere showed it to be a year of unusually light snowfall. The afternoon I arrived was stormy and light snow began falling and continued intermittently for three days, making field work very disagreeable. Two days about Bijou convinced me that notwithstanding the mild winter the avian nesting time would not differ greatly from that of 1911, a year of extremely heavy snow-fall. To find exactly what this difference would be, however, required considerable further field-work. By the 25th of May I felt sure of the late seasonal conditions and immediately wrote Heinemann and Littlejohn to change the date of their arrival from May 28 to June 8.

Heinemann arrived on the above date and Littlejohn the day following. As our pack burro had already been brought up two weeks previously from Carson Valley, Nevada, there was nothing to delay our departure. We left Bijou at ten o'clock on the morning of June 11 and if the picture taken before we started shows some new innovations in loading a burro the credit must be given to Littlejohn. Although the day was very sultry and the road the greater part of the way led through heavy granite sand, our burro, a very willing animal, led by a rope, followed us without urging. Meyer's Station, at the foot of the stage-road summit was made at 1:26 P. M. Here we fell in with McMillan, a forest ranger who very kindly helped us to rearrange the entire pack and also initiated us into the use of the almost indispensable "basco hitch" in roping it on. Meyer's was left at 3 P. M.

On the way to Phillips' Station we noted a number of the rarer forms of alpine bird life, as well as several interesting nests with eggs, and near Deerington's I saw the first California Pine Grosbeak of the year as it flew from a tall fir by the roadside into a distant maze of foliage.

We felt, with the occurrence of this bird on our first day out, that the trip had started auspiciously; but when, sometime later at Phillips' Station, we saw *three* of the birds alight but a few feet from us, on a large and brightly colored umbrella that shaded the seat of a mountain lumber wagon it almost took our breath away. The birds staid but a few moments, however, and before a gun could be brought they had winged their way across the meadows to the thick timber of a neighboring cañon. Needless to say our now famous "flock" of

grosbeaks remained the principal topic of conversation for some time to come.

As we had planned previously we set out next morning to work the summit country around Phillips' Station to secure if possible a Pine Grosbeak or so for the purpose of determining, by dissection, the nearness of the nesting date. Near Deerington's Littlejohn saw our fifth bird, but was unable to secure it. A heavy and very steady rain now set in and finally forced us to seek shelter in an empty cabin. Hour after hour the rain rattled on the roof, and twice I made short journeys to nearby groves but the steady downpour had driven most birds to shelter and as it had made travelling very unpleasant, after the second attempt I desisted and joined Littlejohn and Heinemann who were dozing before a cheerful fire in the cabin. At four o'clock, as the storm showed no sign of abating, we returned to Phillips' Station.

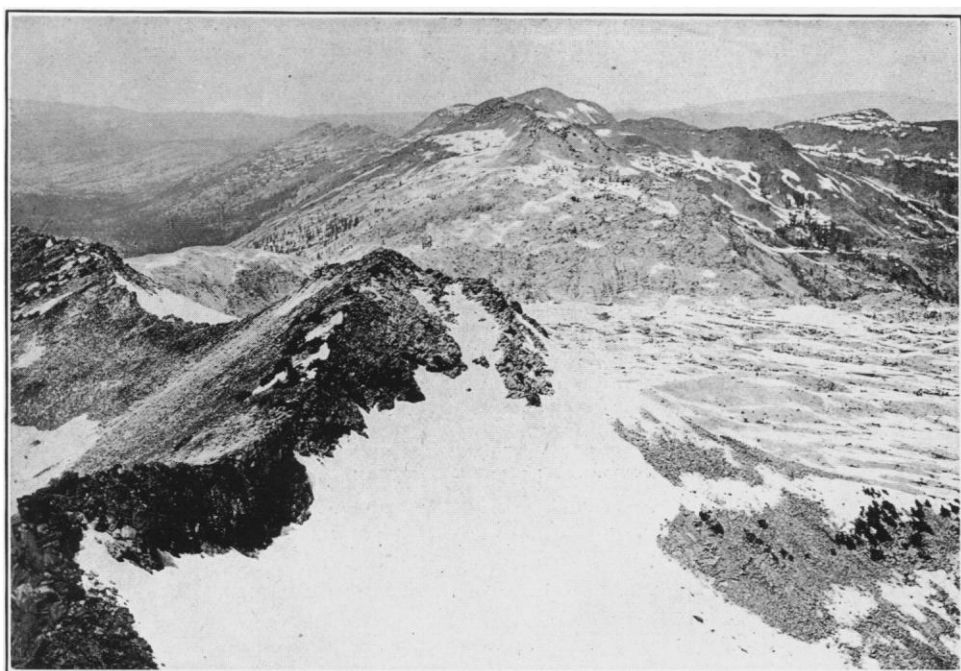


Fig. 71. VIEW FROM PYRAMID PEAK, 10,020 FEET ALTITUDE, LOOKING NORTH; THE CALIFORNIA PINE GROSBEAK HAS BEEN NOTED UP TO TIMBERLINE, WHICH OFTEN EXTENDS TO 9250 FEET; CRYSTAL PEAK IS IN THE IMMEDIATE FOREGROUND; DICK'S PEAK, 10,015 FEET, IS THE HIGH MOUNTAIN RISING IN THE BACKGROUND; PHOTO TAKEN JUNE 17, 1912

Although it was still cloudy the rain had stopped and Wade, as the above place is also called, was left at 8:45 next morning. The road, going west, descends sharply and at 10:45 we reached Echo, 5700 feet elevation. Here, near the foot of the high cliffs shown in the picture (see fig. 67), Littlejohn saw a flock of six Band-tailed Pigeons (*Columba fasciata*), a bird of rare occurrence in this region.

At 2 P. M., after lunch by a roadside brook, we came to the Georgetown Junction road which is marked by the ruins of a tall, solitary chimney, all that remains of a famous pioneer road-house. The Georgetown road is now but seldom used, excepting by cattlemen taking their herds in late summer to alpine

pasture lands, and in many places it was covered by rank overgrowth and marked, almost everywhere, more or less, by all the sins of wintry storms.

Every mile now brought us nearer to the goal of our journey and we watched eagerly for nests that would indicate how far the aestival season had advanced. We had noted three nests of the Western Robin since leaving Phillips' Station the first at 6500 feet elevation and the others at 5500 feet, all with complements of fresh eggs; but as the nesting of this bird is so irregular and extends through such a long season it afforded but a poor index to seasonal conditions.

Our first nest on the Georgetown Road I found at 5800 feet, and was of the Blue-fronted Jay, six feet up in a black oak with four half fledged young. The second, at 6250 feet, was a Slender-billed Nuthatch's, in a cavity of a dead tree but two feet above the ground, with five callow young. Heinemann, at 6500 feet, found the third nest, one of the Yellow Warbler, in a bush by the roadside with four fresh eggs. These three nests seemed to indicate that, when the 7500 foot level was reached, conditions would be what we had calculated upon finding.

The road, which had continued winding and steep, now made a wide, final curve around the mountain side and landed us upon the edge of the Pyramid Peak Plateau, a region of vast forests and endless, wide, deep cañons. Where the precipitous character of the country did not cause the streams to descend in foaming cataracts or roaring, vapory waterfalls, limpid and swift they sped through the forests or peacefully wandered through fertile, boggy meadow lands, occasionally emptying into or emerging from some glassy lake of that wild, picturesque beauty which only high altitudes can bestow.

It was now not long before the road forked, one branch leading north to Wright's Lake and Moratini's, and the other east to the Forni Meadow and Pyramid Peak. The first find on the Forni branch was by Littlejohn, a newly built nest of the Green-tailed Towhee which was placed a few feet up in a thorny ceanothus by the roadside. The road kept steadily, although very gradually, ascending towards the base of Pyramid Peak, the direction, east, being directly opposite to what we had been travelling in order to reach the Plateau. About us, the budding willows, the fresh green grass and bright flowers of the meadowy tracts showed the region to be still in its vernal season. Soon scattered patches of snow, fast melting in the warm sun, lay on the road, and as we proceeded they grew larger and larger until soon the road was lost beneath them. I endeavored to trace the road from the occasional glimpses where it emerged at times, while to Littlejohn and Heineman was given the equally difficult task of piloting "Jim" with his 163-pound load over, or rather through, them; for now, in the late afternoon, the snow was very soft. At times, when the burro floundered about the great drifts, it seemed as if he could scarcely continue unless the load be taken off. Where possible, however, we made wide detours to avoid the deeper drifts and, where drifts hemmed us in, we tamped a narrow path through them which the sapient pack-burro was quick to take advantage of.

At one place I came upon a fir stump with a likely looking cavity and on tapping it and hearing the sibilant note of the Mountain Chickadee I decided to investigate further. The decayed wood yielded quickly to a sharp hand-ax and a set of seven eggs, slightly incubated, soon lay revealed on a thick bed of fur. Scarcely a quarter of a mile farther on I found another cavity in a fir stump from which as I chopped the hissing of the chickadee within gave notice of its being occupied. The nest held eight eggs in the same condition as the first set; both were of the unmarked type. The snow about the stump varied from three

to four feet in depth. The investigation of these nests did not cause us any delay as our burro required frequent rest; but as it was now dusk these were made very short as we were anxious to make Forni's before nightfall.

In the cooler atmosphere the snow was now becoming more firm and fortunately, too, somewhat scattered, allowing us to go along at a rather lively pace. A short distance from the nest of the chickadee I caught sight of two Pine Grosbeaks on an upper limb of a lofty red fir by the road. We could see that one of the birds, fluttering with outstretched wings and open bill, was being fed by the other which appeared, in the fading light, to be a red-plumaged male. We watched the birds with disappointment, for it now seemed apparent that the early breeding record by Coues of another race in Colorado was very likely to apply to the Californian race as well. But soon we witnessed a rather remarkable



Fig. 72. FEMALE CALIFORNIA PINE GROSBEAK AS SHE
APPROACHED NEST; PHOTO TAKEN 35 FEET ABOVE
THE GROUND; THE DENSITY OF THE FOLIAGE
AND CONSEQUENT SHADOWS PREVENTED
THE BEST RESULTS PHOTOGRAPHICALLY

change in the actions of the birds, for they began billing and cooing and all our calculations about hornotines and an early nesting season were cast aside. Excitement ran high, for it seemed more than probable that the birds were nesting, or about to nest, in this very vicinity. Further search was prevented now, however, by approaching darkness.

Although Forni's was yet miles farther on, night close at hand, the road snow-covered and hard to follow, and the burro completely tired out, we proceeded on our way jubilantly, for at last it seemed success was within our reach. Nine feet up, from a hole in a dead fir along the road, I flushed a White-headed Woodpecker, but I did not climb to it. Swift running streams now became numerous; it was necessary to ford these as the bridges had all rotted or washed away. "Jim", unlike most "Nevada Mockingbirds", showed no particular aversion to the

water and plunged across them gallantly. In fact, on one occasion he elected to take a rest in mid-stream much to our surprise and discomfiture.

When within about a mile of Forni's I relieved Heinemann of leading the burro while our official photographer and Littlejohn hurried on to the cabins to prepare the evening meal. Being fairly well acquainted with the locality and finding the road, which now headed across a boggy meadow and around a swampy shallow lake, almost impassable, I struck out over a heavily timbered ridge. After some trying experiences I finally reached the cabins at a quarter to eight.

Here our fagged-out burro was given shelter in a log barn which we found well stocked with hay. With this and with the addition of oats, a delicacy held in high favor by all "Sage-brush Canaries", of which we carried a 25 pound sack, our song-bird fared well. Within, the alpine dwelling was soon made cheerful by the light of lamps and candles. With the crackling of a fire and the grateful odor arising from steaming viands all the hardships of the day were soon half forgotten.

As the photo shows (fig. 62), Forni's is situated at the head of a long, glacial meadow at the base of Pyramid Peak. Almost at our cabin door and fed by the snows of Pyramid flowed a merry little brook that furnished us with crystal liquid during the day and sang us to sleep with its pleasant hum at night.

The first day afield in any region is ever the most enjoyable; and with much expectant enthusiasm, boyish if you will, we arose early next morning and were soon abroad in the pleasant, crispy, sunny atmosphere. As we journeyed down the meadow, retracing our steps of the night before, we saw Red-breasted Nuthatches, California Creepers, Mountain Chickadees and Sierra Juncos, some of which were engaged in nest building, and as the nest of the White-headed Woodpecker I had located the night before was found to contain five almost fresh eggs, we rather hurriedly and feverishly endeavored to cover the miles that lay between us, and where the Pine Grosbeaks had been previously seen. Several miles before we came to that now historic spot I came upon another pair billing on the limb of a lodge-pole or tamarack pine. I immediately gave the pre-arranged signal call and Heinemann and Littlejohn joining me the birds were observed from three different points at once. After some time, however, the pair flew away to a far-off hillside where all track of them was lost. Neither were we able to find any trace of the pair seen the previous night although we spent considerable time in the vicinity.

We lunched nearby at the edge of a hill-top clearing which gave a rare view of the surrounding mountains. Here I spied an Audubon Warbler engaged in building a nest on the perilous end of a long, drooping, fir branch 75 feet up. As we viewed the nest we all echoed the hope that even with the loss of an opportunity to try our various paraphernalia, we much preferred that any nest of the Pine Grosbeak found would be in a more accessible situation.

On the way back, on reaching the Forni meadow, Heinemann and Littlejohn went on to camp while I continued to spend some further time afield working the section that lies southeast of the meadow. Here I came upon a male Pine Grosbeak singing in a fir top, and later a pair which, engaged in preening their feathers, I watched for nearly two hours. I felt sure I was unseen by the birds so stealthily had I approached, and when they took flight I was reasonably certain it was the flight of birds who were still roaming about with no particular interest as yet in any fixed locality. On this and succeeding days in our search for a

home of the Pine Grosbeak we found some very interesting nests with eggs including such rarities as the Lincoln Sparrow and Green-tailed Towhee, which I hope to describe at some future time.



Fig. 73. FIR (AT NEAR CENTER) IN WHICH THE FIRST NEST OF THE CALIFORNIA PINE GROSBEAK WAS FOUND; SCATTERED PATCHES OF SNOW WERE STILL ON THE GROUND BENEATH THE TREES AT THIS DATE, JUNE 15, 1912

As the day's work, which had been done between 7250 and 8000 feet altitude, had been without result, as far as tangible Grosbeak-nesting evidence was concerned, we decided the following day to go to the limit of the timber which is at

about 9250 feet elevation. We started the ascent early and long before noon we were in a snowy region of an intense dazzling whiteness. From the snow which everywhere covered the ground came a peculiar white light as from myriad tiny suns, and which made the region seem more like fairyland than earth. In this snow country except for noisy Nutcrackers birds were few, an occasional Mountain Chickadee, Mountain Bluebird, Sierra Junco or Western Robin being all that were noted. Notwithstanding this scarcity, however, we put in half the day scanning the trees with the forlorn hope that one might contain one of those shallow platforms of twigs and rootlets, peculiar to the family of grosbeaks, which our mind's eye had often pictured.

At 8500 feet altitude, where a roaring torrent billowed over rocks and boulders and through high drifts of snow, we stopped for luncheon to compare notes. To all it appeared necessary that the very next bird be secured for purposes of dissection. We now followed the waterway for some little time when, as it started a very rapid descent, I who happened to be leading, crossed to the south bank. Littlejohn, interested in the distant movements of a Williamson Sapsucker, crossed also and coming later to a fork we continued southwesterly. It was now a little after one o'clock and the three of us, about fifty yards apart, were rounding a very rocky hillside at the foot of which a shallow, placid lake glittered in the sunlight. Hearing the distant song of a Pine Grosbeak I drew nearer and soon saw the bird at the top of a fir about 200 feet high. Seldom if ever have I heard a more beautiful song than that which floated out from the top of the tall, massive fir and the effect of which the wild surroundings did much to accentuate. The day was calm and still; that almost deathly silence peculiar to high altitudes remained unbroken save for the distant roar of angry snowstreams.

The song of the California Pine Grosbeak does not, I think, bear so much resemblance to that of *Carpodacus cassini* (which Price has compared it with) as it does to that of the Black-headed Grosbeak. However, as it is so much more varied, melodious and rich than that of the Black-headed Grosbeak, the comparison merely serves to give a general idea of its style. The song consists of a series of trills, warblings and mellow, flute-like notes that must be heard to be appreciated. The bird as a songster ranks easily with the best of Sierran vocalists like the Ruby-crowned Kinglet, Water Ouzel and Sierra Hermit Thrush. Unlike the Western Robin which, perched on some tree top, will sing through almost the entire day, the Pine Grosbeak is not a persistent singer and only on rare occasions have I been given the opportunity of hearing its song.

As I rounded the tree the bird left its lofty perch and, alighting in a low fir nearby, began a peculiar melodious twittering which unfortunately at that time I did not know the meaning of. Although I disliked very much to shoot any Pine Grosbeak, and this one in particular, I remembered our previous agreement and called Littlejohn to the spot. He succeeded in only slightly wounding it, however, for when it struck the ground, it was apparent that the bird was still very much alive. To add to the excitement of the occasion, as Littlejohn shot, another Pine Grosbeak with heavy, startled flight fluttered out from an adjacent fir. As our wounded bird was racing away we had no time to investigate this, but started in pursuit. After catching the disabled bird we returned to where the second bird had flown from.

Littlejohn was slightly in the lead and when he reached the tree there, sure enough, on an open, outer branch in plain view, but sixteen feet up, was the

nest. To our joyful amazement, too, we noted the tail of a sitting bird projecting over the edge of the nest, it being evident that the bird had returned after but a very short interval. I do not believe I ever reached a nest more speedily, but

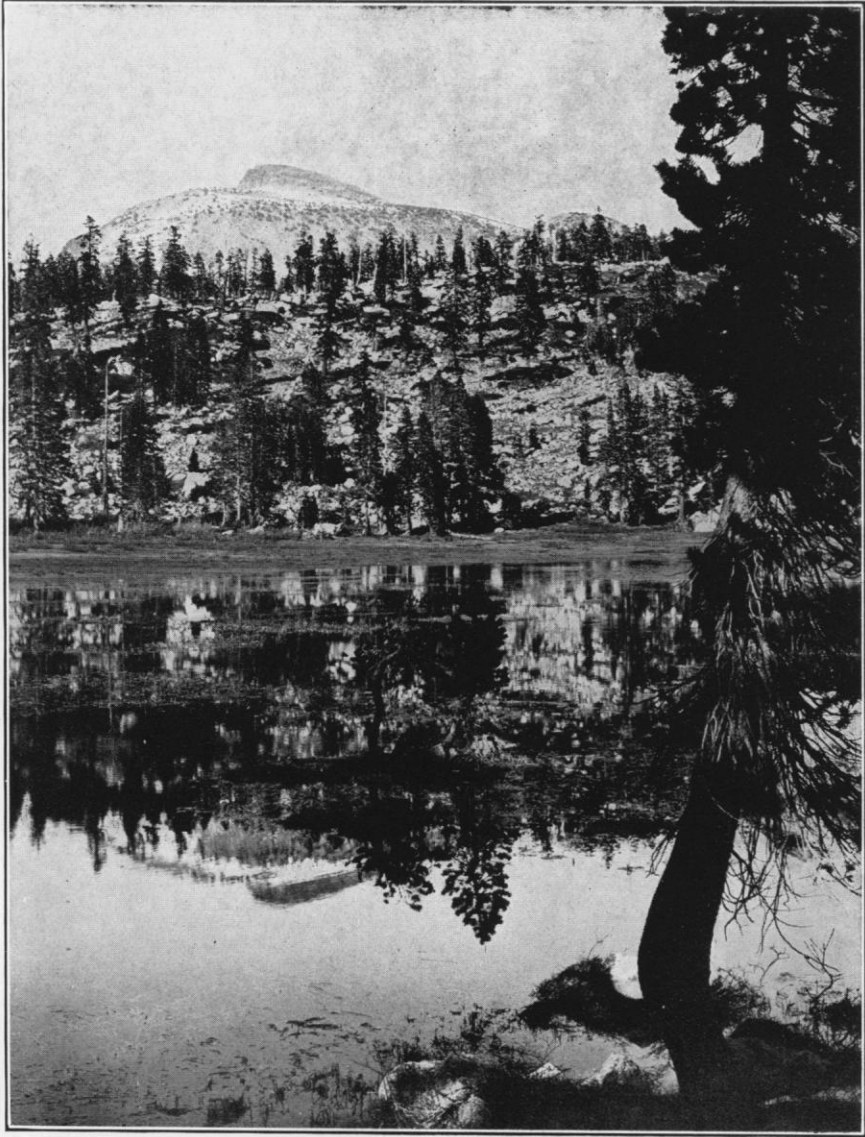


Fig. 74. VIEW TAKEN A SHORT DISTANCE FROM THE CALIFORNIA PINE GROSBEAK'S NEST, SHOWING CHARACTER OF THE COUNTRY IN THE BIRD'S SUMMER HOME; PYRAMID PEAK IS THE MOUNTAIN RISING IN THE BACKGROUND; DATE JUNE 19, 1912; ALTITUDE 8000 FEET

when I came within arm's reach the bird was so reluctant to leave that I could not refrain from pausing for a few moments to observe at such close range this *rara avis*, almost concolored except for the fulvescent plumage of the head and

neck. After gentle urging the bird was induced to leave, disclosing in a frail rootlet nest a single dark maculate egg with a rich blue ground—the imparting of which information brought prolonged cheers from below. The find was made at exactly 1:15 P. M. On account of being an incomplete clutch it was deemed advisable that I hastily descend, that a conference might be held. As we retired from the spot we were glad to see the bird shortly after come back to the nest. Littlejohn soon dissected the bird shot which, although having the yellow plumage of the female, proved to be an adult male. That a bird in this plumage was an adult in full song, and breeding, was proved. I believe this will be found to apply to the whole genus as well, that birds in this yellow phase of plumage are not necessarily immature as has been suspected.

It was now apparent, and to our great disappointment, that as we had unfortunately shot the male parent, the chances of obtaining a complete set of eggs were rather remote. Littlejohn felt sure, however, that the bird would soon lay one or more eggs at least, from the fact that she was sitting so close on the "single." It was for this reason we decided to return to the nest again a few hours later when, if the nest still contained but the single egg, we intended substituting one of the Western Robin marked with pencil spots in imitation of the Pine Grosbeak's. We determined on this course as we felt there was a great possibility now of the bird deserting and the egg being destroyed by the bird herself or other agencies.

On our return to the nest at half past three the bird was setting, but when flushed only the single egg was in the nest. This was taken and the substitution made, as previously planned. As before, the bird returned to the nest shortly after we left. Some distance away the collecting case was opened and the egg, a very richly marked specimen, was shown to the expectant eyes of Heinemann and Littlejohn. The following morning we made an early visit to the nest again, but although the bird was still sitting, only the substituted egg was in the nest.

The afternoon was spent in new territory southeast of Forni's. Here I came, at 7250 feet altitude, upon a male Pine Grosbeak in a low fir which we watched very closely, and when it flew away every tree in the neighborhood was inspected narrowly but without result. Returning I ran across a pair of birds near the lake shown in the picture (see fig. 74). After following them for some time over a rough country interspersed with snow-drifts, bog, boulders and snow-streams we found ourselves on a ridge near camp and our Pine Grosbeaks nowhere in sight.

On June 17 another early morning trip was taken to the original Grosbeak's nest. Approaching I noticed the bird absent but, to my great satisfaction, on climbing the tree I found a second egg had been laid which as before was replaced with one of the Robin. Both eggs in the nest were cold.

Returning to camp we were joined by Heinemann, and the ascent was made of Pyramid Peak, Littlejohn desiring to secure a specimen or so of the *Leucosticte*, Heinemann some photographic views, and I to study the topography of certain sections in the region, the summit of Pyramid affording an unequalled opportunity in this respect. On the trip, at 9250 feet, a nest of the Sierra Junco, remarkable for its elevation, was found with four eggs. In all, but half a dozen *Leucostictes* were seen and none secured. During the day we ranged between 7500 and 10,020 feet elevation, but no Pine Grosbeaks were encountered.

The following day (June 18) Littlejohn and I returned a second time to



Fig. 75. NEST AND EGGS OF THE CALIFORNIA PINE GROSBEAK IN PLACE; THE CAMERA DIRECTLY ABOVE, AND TWIGS SHOWING ON SNOW 16 FEET BENEATH THE NEST; TYPE SET

the locality where on June 13 we had seen the first birds on the Plateau. Here, in passing along the edge of deep snow-drifts which lay everywhere through the woods, Littlejohn came upon a female *Pinicola* feeding on the snow, while a brilliant red-plumaged male was flitting among the boughs above. In endeavoring to secure the latter the female was seen to fly to a nearby tree where she began hopping from branch to branch until a height of about 25 feet had been attained whereupon she flew to, and disappeared in, the thick foliage of a hemlock bough. Advancing nearer, Littlejohn could just discern the tail of the bird projecting over what might be a nest and which on my climbing the tree proved so to be. Being situated eight feet out near the end of the limb, and in a thick patch of foliage, it could not be seen from above except by spreading the branches apart. On doing this and after the sitting bird had been urged off with a long stick the nest was seen to contain three eggs. Being unable, without equipment, to do anything further, we started back to camp, Littlejohn and Heinemann going direct while I headed over the ridge to our first nest. Here, although the bird was seen nearby, the nest contained no further eggs.

On the following morning we returned, with Heinemann, to the second Grosbeak's nest with carpenter tools and sufficient boards to build a rough platform up in the hemlock, which would serve in securing the eggs as well as photographs of the birds. After the writer had climbed the tree, and the tools and lumber were hauled up, a strong though rough platform was built; and to show how remarkably close Pine Grosbeaks sit I may add that the bird remained on the nest during the entire time, nor did she flush even when the edge of the staging was placed and nailed but a few feet from her.

Heinemann came up next and being somewhat unaccustomed to tree climbing was aided by a rope around the waist. His photographic apparatus was now brought up and preparations made to secure pictures of the bird. These could be taken only as the birds approached the nest; for when sitting on the latter, she was almost invisible. Never have I seen any bird so persistently return to a nest as the Pine Grosbeak did; for no matter how often she was driven off she continued to immediately fly back, and often so quickly that we had no opportunity to get her on the plate. Owing to deep shade in the forest we soon realized that we could scarcely hope for the best results photographically. Considerable snow lay beneath the trees, but being in the shade and as we, too, were 35 feet above, its effect was not perceptible.

When flushed the bird almost invariably flew across to one of the nearby firs and pausing but a moment immediately returned. As our only opportunity for pictures lay in getting the bird in a certain position, and as she frequently lit close to a dark fir trunk or against the light it was necessary in all to flush the bird forty-one times. No photographer could wish for a more willing subject, for she promptly returned on each occasion. The bird was utterly fearless, coming at times very close to us and seeming rather puzzled than alarmed or angered by our aggressive operations. Once a Mountain Chickadee and at another time a Sierra Junco came near the nest-tree, and the female being off on both occasions, she joined her mate in driving them away. Another time, however, when a Western Robin lit close to the nest the birds showed no concern whatever.

The pictures shown were taken when the bird lit in a fir close by, the best being secured when the Grosbeak was on the extremity of a long branch in a rather open situation. The male only put in his appearance at intervals, and

while occasionally approaching quite close never came within arm's length as did the female. Sometimes the latter would hover directly over the nest melodiously twittering. Neither bird made any attempt to resent our intrusion as birds of a more combative temperament like the Brewer Blackbird or Olive-sided Flycatcher would have been apt to do; in fact, they were of a remarkably gentle and affectionate disposition, and a number of times the pair were noticed billing which shows this habit is not necessarily confined to the time of courtship.

The call-note of the Pine Grosbeak, and we surely had an unequalled opportunity for hearing it, is a two-syllabled call bearing some slight resemblance to the words "all-right". Although Chester Barlow has stated that it is a "harsh call-note like that of the Louisiana Tanager", we cannot agree with him. In the first place, "churtig", the call of the Tanager is not itself particularly unmusical and in the second place the call note of the Pine Grosbeak is much more melodious being peculiarly clear and liquid. It is of an earnest, pleasing, mel-



Fig. 76. ANOTHER POSE OF THE FEMALE CALIFORNIA PINE GROSBEEK NEAR NESTING-SITE

low character and directly opposite to "harsh" which the dictionary defines as "rough to the ear, grating, discordant and jarring". It will also be remembered that Mr. Price, in his notes, states that "the call is not loud nor harsh like that of the Western Evening Grosbeak."

As this was the identical place where we had seen two Pine Grosbeaks the evening we reached the Plateau we felt sure that these were the same pair of birds. At both nests observation showed that incubation was being done entirely by the female. In no instance was the latter fed on the nest but in some nearby tree. At other times the bird was seen foraging by herself, the bird's food being always so readily available that it was unnecessary for her to remain off the nest but for a very short period. We had visited this same locality several days before but on that occasion as the male was away and the female sitting close on an almost invisible nest, the Pine Grosbeak and her home escaped our notice.

After the photographic work was over, the nest and eggs with the parent

birds were collected. The eggs showed at least eight days incubation and they had lost, as is usual with most well-incubated eggs, a certain glossiness of shell and freshness of ground-color.

Leaving my companions to continue on to camp I journeyed over the ridges to Grosbeak nest number one. There, while a third egg was collected, the nest was undoubtedly deserted, for the lining was partially torn up, the eggs stone cold and the parent bird nowhere in sight. It being early in the afternoon I still had sufficient time to make camp and come back with Heinemann who took several photographs of the nest and eggs *in situ*. Measurement showed the nest to be sixteen feet above the ground, four feet out from the trunk and twenty-one inches from the tip of the branch. The red fir in which it was placed was on a sloping mountain side where the rather scattered timber rose amid huge boulders, fallen trees and fast melting banks of snow, some of which may be seen below the nest in the photograph (fig. 73).



Fig. 77. FEMALE CALIFORNIA PINE GROSBK AP-
PROACHING NEST; PHOTOGRAPHED 35 FEET
ABOVE THE GROUND

The nest was simply a rough platform of twigs, principally fir, and was thickly lined with very fine light-colored grasses. So thick is this grass lining that eggs in the nest were not visible from below. The twig platform measures 6x8 inches, the grass nest cavity, $5 \times 4\frac{1}{2} \times 1\frac{1}{4}$ inches deep. With the exception of some eggs of the *Raptores*, perhaps, there are but few eggs to be found in California that are as richly colored. In describing their coloration I have used Ridgway's *Nomenclature of Colors*, 1886. In Ridgway's book, however, the paint on the plates has been unevenly

applied with the result that the color of nearly every individual plate varies more or less in intensity making an *exact* comparison difficult.

The ground color of the eggs approaches closely to Nile Blue (no. 17, Plate IX), but is slightly deeper and more rich in shade. The surface markings are spots and blotches, chiefly around the larger end, and in the form of a rough wreath, of black and of a rich deep brown called Vandyke (no. 5, Plate III). There are underlying scattered spots of Wood Brown (no. 19, Plate III), and splashy shell markings of Olive Gray (no. 14, Plate II). The eggs are ovate in shape and measure as they lie in the picture 1.02x.69, 1.02x.67, and .98x.71 (see fig. 78).

The second nest was situated 35 feet up, eight feet from the trunk of the hemlock, and two feet from the end of the limb. It closely resembles the type

nest in construction, having a flimsy platform of small dead hemlock twigs from three to eight inches long, intermixed with a few stems of some tough wire-like shrub. On this platform rested the nest proper, of fine light-colored grasses. The whole structure is in no way fastened to the branch but simply rests on several twigs. Altho the nest can be easily seen through, in the tree it was entirely hidden, from above by the thick green foliage which hung over it only two inches away, and from below in like manner. The main branch on which the nest rests is well covered with the bright yellow moss peculiar to most trees in these altitudes. The nest measures eight inches over all, and the grassy interior is $3\frac{1}{4} \times 3\frac{1}{4} \times 1\frac{3}{4}$ inches deep.

The second set of eggs is similar to the type set except that they rather approach elongate-ovate in shape, the ground color is slightly paler and duller, and the markings lighter and less scattered, except on one specimen where they are

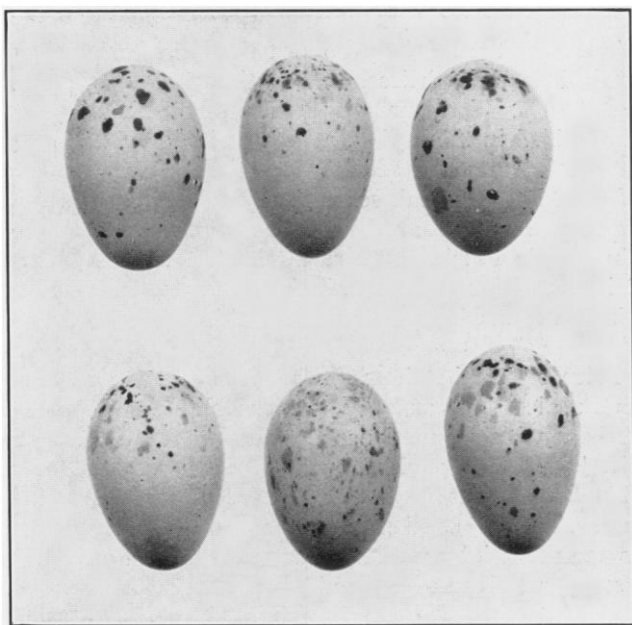


Fig. 78. EGGS OF THE CALIFORNIA PINE GROSBEAK; UPPER ROW TYPE SET, LOWER ROW SECOND SET; EXACTLY NATURAL SIZE

finely distributed over the entire surface. In the position shown (fig. 78) they measure in inches 1.02x.68, 1.00x.68, and 1.06x.68.

It may be of some interest to compare the rarity and difficulty of securing the type set of eggs of the Gray-crowned Leucosticte, or Rosy Finch, with that of the California Pine Grosbeak. The former, although inhabiting a region more difficult to reach, can usually be relied upon being found in certain localities. The Pine Grosbeak on the other hand is extremely erratic in its distribution. The habitat of the Rosy Finch along the timberless Sierran Crest is open while that of its neighbor just below is in the dense forests of a great woodland. While we saw several Rosy Finches engaged in nest building in our search of 1910 we were only able to definitely locate and reach but a single nest. On the other hand both nests of the Pine Grosbeak, while difficult to locate, were easily acces-

sible. The Rosy Finch is distributed over a wide range of country, the Pine Grosbeak over a very restricted area. The eggs of the rupicoline Rosy Finch defied a small army of searchers for 79 years; those of the arboreal Grosbeak, but a small fraction of that number, for 49 summers. From this comparison all can draw their own conclusions as to the relative rarity and to the comparative difficulty of securing the respective first sets.

The following description of the male Pine Grosbeak collected with the type set serves to show how birds in this "yellow" phase of plumage are almost, if not entirely, indistinguishable from the females in coloration: General color of body plain gray; wings and tail somewhat darker. Most of the wing feathers, both quill feathers and coverts, edged with whitish. Tail feathers edged with the same grayish shade as the body color. Top of head and cheeks coppery yellowish, this color extending in disconnected spots onto the dorsum. A small spot of the same yellowish color on the rump.

While the rich poppy red plumage of the male California Pine Grosbeak is not so conspicuous as the bright yellow of the Louisiana Tanager or Western Evening Grosbeak, it is, nevertheless, one of the most beautiful of all Sierran birds. Campers, tourists and summer residents often described the Tanager, which is a common bird in the region, asking us its identity; and sometimes, too, the Evening Grosbeak had attracted their attention. But when we, in turn, gave a description of the Pine Grosbeak scarcely anybody ever recollected seeing such a bird, and when they did we soon found they were confusing it with the very abundant Cassin Purple Finch. The resemblance to this bird is, however, only slight. The California Pine Grosbeak, both in form and flight is a rather graceful bird, for although somewhat plump in build this is equalized by the long wings and tail.

Although Price states that he saw the Pine Grosbeak usually in company with the Cassin Purple Finch and the Western Evening Grosbeak it may be of interest to note how widely experience may differ, for on no occasion have we ever seen the bird associating with any other species.

On June 20, the day after the two sets of eggs were collected, Littlejohn desiring to secure a Rosy Finch before leaving and I to investigate the nidological possibilities of the wild woodland that surrounded a certain alpine lake, started up the southeast slope of Pyramid Peak. As we ascended, we could see approaching from the west a lofty wall of huge, brownish, storm clouds extending north and south as far as the eye could reach. From previous experience in these altitudes we needed no barometer to tell us that a great storm was approaching, and curtailing our trip afield as much as possible we returned to camp several hours before noon. Under the circumstances, the principal work of the trip having been accomplished, hasty preparations were made for an immediate departure; for already the sky was clouding and a gusty wind wailing along the meadows. During our absence close to the cabins Heinemann saw the last Pine Grosbeak of the year, the eighteenth bird to be recorded.

The following table gives a summary of our season's work afield. Where the same birds were seen on succeeding days their occurrence is not recorded. Although Heinemann heretofore has not engaged in ornithological work afield I have counted his mileage on the present trip, as he made it a point to familiarize himself with the Grosbeaks both by sight and song.

Leaving Forni's at 2:40 P. M. we took a very direct trail down precipitous mountain sides to Echo which we reached at 5:40 P. M., and later Phillips' at

7:15 P. M. Here the following morning, the weather clearing somewhat, we spent the forenoon in the field, recording some interesting notes on *Melospiza lincolni* and other birds. The trip ended at Bijou which was reached at dusk.

TABLE SUMMARIZING SEASON'S EXPERIENCE WITH THE CALIFORNIA PINE GROSBEAK

DATE	BIRDS	FOUND BY	LOCALITY COVERED	ELEV. COVER'D	MIL'GE for ALL
June 11	1	Ray	Deerington's	7000 to 7600	20
" 12	3	All	Phillips'	7250 to 6900	3
" 12	1	Littlejohn	Deerington's	6900 to 7250	7
" 13	2	Ray	Pyramid Peak Plateau	7000 to 7600	24
" 14	5	"	" " "	7250 to 8000	28
" 15	2	"	Slope of Pyramid Peak	7500 to 9250	45
" 16	1	"	Pyramid Peak Plateau	7000 to 7600	40
" 16	2	"	" " "	7250 to 7600	5
" 17	0	—	Plateau and Peak	7500 to 10,200	30
" 18	0	—	Pyramid Peak Plateau	7250 to 7600	20
" 19	0	—	" " "	7250 to 8500	45
" 20	1	Heinemann	Plateau and Peak	7000 to 8500	25
" 21	0	—	Phillips'	7000 to 7600	20
<i>Total Birds</i>				<i>Total Mileage</i>	
18				312	

Next morning a wild snow-storm broke over the whole region, lasting three days and draping valleys and mountains in a wintry mantle. Littlejohn and Heinemann fled away to lower altitudes while I, lounging before the pleasant log fire in the Bijou Post Office, whiled away the time reading Whittier's "Snow Bound", while the storm raged without. At times, when the clouds lifted, I could see Pyramid Peak far distant and snowy, and I thought, with no regret, of the dreary prospect doubtless now in view from the windows of the Forni cabins.

NOTES FROM TODOS SANTOS ISLANDS

By A. B. HOWELL

TODOS SANTOS consists of two main islands a hundred yards apart. The southernmost one is the larger, being a mile and a quarter long, half a mile wide, and three hundred and thirteen feet high, while the one towards the north is but half a mile long, a quarter of a mile wide, and fifty-five feet high. They are surrounded by numerous small outlying rocks and beds of kelp, and are in general similar to the smaller islands off the southern California coast, being almost barren of vegetation. They are opposite Ensenada Bay, and although but three miles from Banda Point, a narrow rocky headland jutting out to sea, they are some ten miles from the general coastline. Because of their proximity to the mainland, one would not expect to find a large variety of unusual stragglers which have become lost in migration, as is the case on the Farallones for instance, and the avian visitors seem to consist of prosaic migrants that are to be found in abundance farther north.

My visit to the islands was from April 15 to 20, 1910, too short a time to be able to record a long list of species, but some few interesting things were noted.

As far as I could discover there were no cats or foxes on the islands, and the rats can increase and multiply almost indefinitely. The place is alive with them,